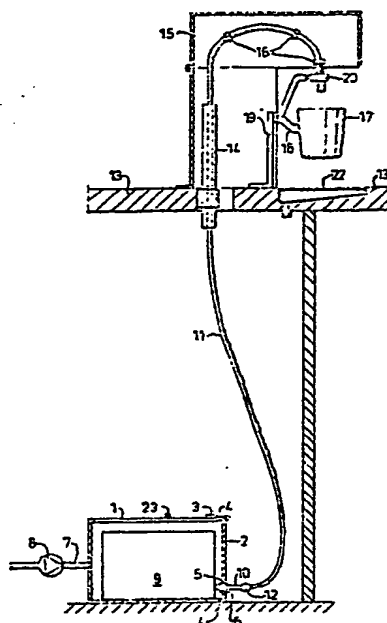




## INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

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(54) Title: **DEVICE FOR DISPENSING BEVERAGES, SUCH AS MILK, JUICE ETC.**

## (57) Abstract

A device for dispensing beverages, such as milk, juice etc., comprises a box-shaped outer casing (1) with a door (2), which outer casing and door are impervious to air, and a compressor (8) connected to the outer casing (1) by a pipe conduit (7). Into said outer casing (1) a container (9) can be inserted, in which the beverage is enclosed in a compressible shell, such as a plastic bag, which shell has an outlet spout (10) through the door (2) and sealed against the same by a sealing (6). To the outlet spout (10) a hose (11) is connected in known manner which extends directly to the dispensation place, so that compressed air generated by the compressor in the outer casing presses the beverage in the container through the outlet spout and hose to the dispensation place.

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Device for dispensing beverages, such as milk, juice etc.

This invention relates to a device for dispensing beverages, such as milk, juice etc., from a relatively large container, which is located beneath a dispensation place, for example  
5 in a lunch room, dining-room, bar etc., where the beverage is caused to flow upward to the dispensation place to be tapped there in a controlled manner.

The Swedish patent application No. 7711743-0 describes an advantageous device, at which the beverage delivered is en-  
10 closed in a container holding, for example, 20 litres, and which is provided with an outlet spout, to which a hose is connected. Said hose is drawn through a peristaltic pump, which acts on the hose for advancing the beverage. By such an arrangement the hygiene is maintained high, because the  
15 hose can be exchanged, when desired, very easily, for example every day. The pump, however, need not be dismantled nor be cleaned.

The said known device, however, has the inconvenience that the hose must be drawn through the pump. This requires time  
20 and involves trouble both when the hose is being mounted in and when it is being removed from the pump. The pump, moreover, gives rise to an unfavourably pulsating flow and requires the hose to be provided with a flow equalizer.

The present invention has the object to design the device  
25 in such a manner, that the peristaltic pump can be abandoned and thereby the disadvantages involved therewith are eliminated.



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This object is achieved according to the present invention by means of a device, the characterizing features of which are defined in the attached claims.

The invention is illustrated in the accompanying drawing, 5 which by way of example shows an embodiment of the invention, and in which the Figure is both a schematic lateral view and a vertical section of the device according to the invention.

The device shown in the drawing comprises a preferably parallelepipedic outer casing 1 with a door 2. The casing 1 as 10 well as the door 2 are made of material impervious to air, for example sheet metal or rigid plastic. The door preferably is entirely detachable from the outer casing and can be pressed about its circumference against the outer casing by means of some clamping members, for example the clamp catch 15 3 indicated schematically, which is mounted on the outer casing and engages with the door. At the place of contact between the door 2 and the outer casing 1, a suitable sealing is located. In the lower portion of the door a through bore 5 is provided, in which a sealing 6 of the rubber bushing type 20 is inserted.

A pipe conduit 7 from a compressor 8 is connected to the outer casing 1, which casing is provided with a safety valve 23.

Inside of the door 2 a parallelepipedic container 9, such as a milk or juice cardboard box of known type is located in 25 the outer casing 1, which box consists of a compressible inner shell, for example a plastic bag, for milk or juice, which shell is not attached to the outer casing of the container which is of rigid paperboard or carton. The inner shell has an outlet spout 10 projecting outside the container and passing 30 through the bore 5 with rubber bushing 6 in the door, so that the spout is sealed against the door 2, which thereafter is sealingly attached to the outer casing 1.

To the outlet spout 10 one end of a hose 11 is connected in known manner by means of a joint nipple 12, and from there the hose extends upward to a dispensation table 13, in such a manner, that the hose is drawn through a sleeve 14 and is detachably supported in curved shape by a clip 16 located beneath a carrying hood 15, so that the mouth of the hose 11 is directed downward above a glass 17, which is held pressed against a pivotal lever 18, which is supported by a stand 19 on the table 13 and arranged to co-operate with a tapping means 20, which is supported, for example, by the carrying hood 15 and provided about the outer end of the hose for forced closing the same, but for opening by action of the lever 18. Below the glass 17, a drip groove 21 with a sieve plate 22 is provided in the table 13.

For operating the device, the compressor 8 is started, which through the pipe conduit 7 supplies compressed air to the outer casing 1. The compressed air penetrates through the unsealed outer casing of the container 9, for example at the outlet spout 10 and at the corners of the outer casing and presses against the compressible inner shell located freely in the outer casing. As a result, the milk or beverage in the shell is driven through the outlet spout 10 and into the hose 11 where it continues upward to the tapping means 20 thereof. Said tapping means opens when a glass or the like is pressed against the lever 18 whereby milk or beverage flows down into the glass. Said flow is stopped when the glass is removed from the lever 18.

As the milk or beverage has to flow only a relatively short vertical distance from the container 9 to the outlet of the hose 11, the compressed air often need not have a pressure higher than about  $0,15 \text{ kp/cm}^2$ , and the compressor 8 can have a relatively small size and capacity, because the outflow from the hose mouth shall be relatively slow. The compressor may

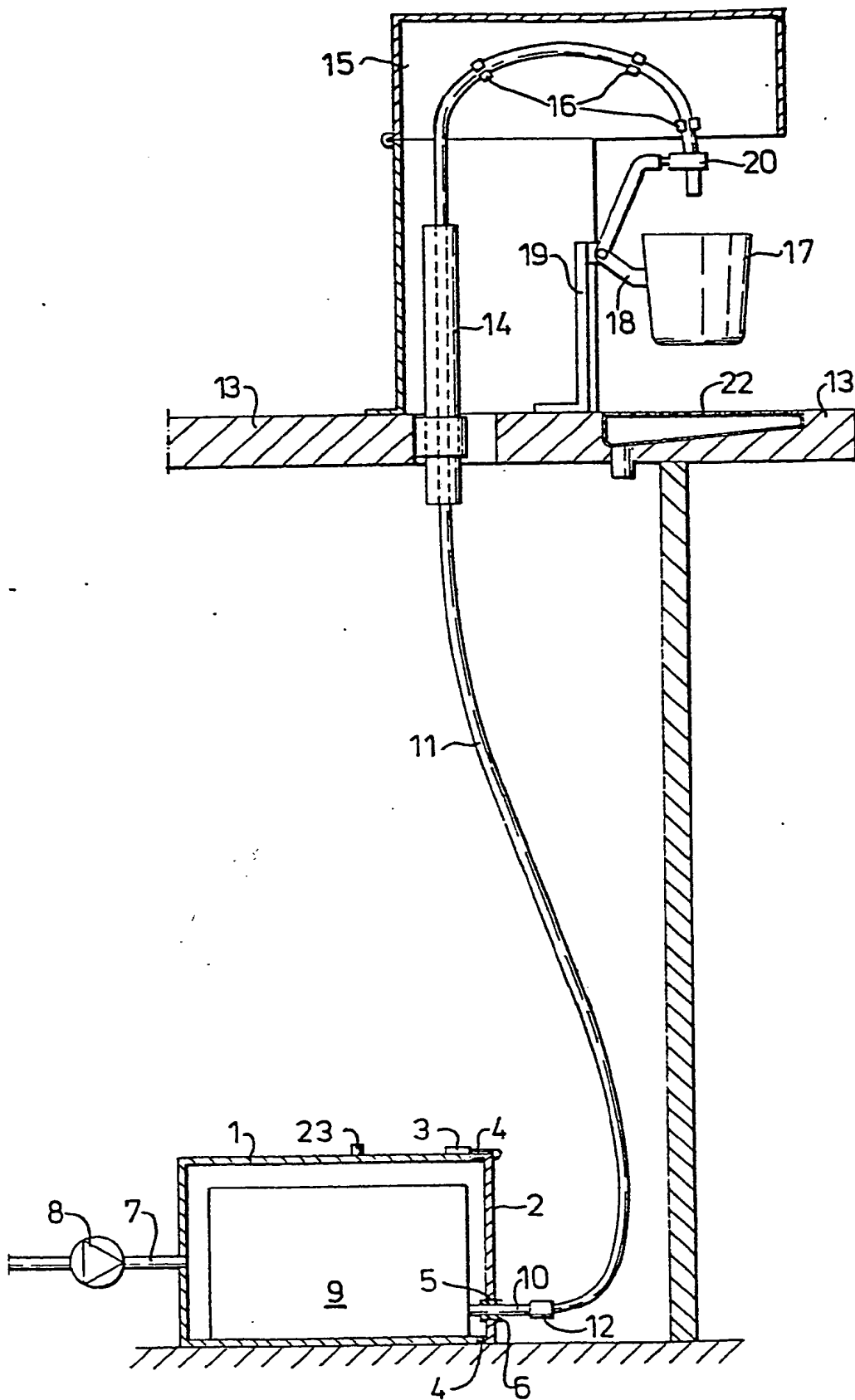
run continuously, especially if the safety valve prevents too high air pressure in the outer casing 1, or intermittently with control from a pressure switch, or the lever 18 of the tapping means may actuate a switch connected to the electric  
5 circuit of the compressor.

The invention must not be regarded restricted only to the embodiment described and shown in the drawing, because it can be modified within the scope of the invention. The outer casing, for example, and its door may be designed for receiving  
10 a beverage container in such a position that the outlet spout is directed substantially straight downward or upward. Also the structure for both carrying the hose and for closing and opening its mouth may be modified. The outer casing as well as the container may each have varying shapes. The compressor  
15 may be replaced by another compressed air source.

Claim

A device for dispensing beverages, such as milk, juice etc., enclosed in a preferably relatively large compressible shell, which preferably together with an enclosing carton forms a container (9) and is intended to be mounted below a dispensation table (13) with a dispensation place, which shell has an outlet spout (10), to which a hose (11) is connected which extends directly to the dispensation place and there has a downward directed terminating mouth, c h a r a c t e r i z e d i n that it comprises a preferably box-shaped outer casing (1) with a door (2), both of a material impervious to air, which casing is intended to be mounted below the dispensation table, that to the outer casing a pipe conduit (7) from a compressed air source, for example a compressor (8), is connected for supplying compressed air to the outer casing, and that the container (9) can be inserted into the outer casing (1) so that the outlet spout (10) extends through the door (2) or outer casing (1) and is sealed by a rubber bushing (6) or the like and projects outside the door for being coupled together with the hose (11) extending to the dispensation place.





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# INTERNATIONAL SEARCH REPORT

International Application No PCT/SE80/00352

## I. CLASSIFICATION OF SUBJECT MATTER (If several classification symbols apply, indicate all) \*

According to International Patent Classification (IPC) or to both National Classification and IPC 3

B 67 D 1/06

## II. FIELDS SEARCHED

Minimum Documentation Searched \*

Classification System	Classification Symbols
IPC 2,3	B 67 D 1/00-1/10, 3/00-3/04, B 65 D 25/14, 25/16, 25/13, /
US Cl	220:1, 20, 20.5, 23, 400-470 /25/38
National Cl	64c:3, 5, 7, 10/01

Documentation Searched other than Minimum Documentation  
to the extent that such Documents are included in the Fields Searched \*

SE, NO, DK, FI classes as above

## III. DOCUMENTS CONSIDERED TO BE RELEVANT <sup>14</sup>

Category *	Citation of Document, <sup>15</sup> with indication, where appropriate, of the relevant passages <sup>17</sup>	Relevant to Claim No. <sup>18</sup>
A	US, A, 2 831 610 published 1958, April 22, H E Dennie	1
A	US, A, 3 112 047 published 1963, November 26, C F Weinreich	1
A	US, A, 3 243 084 published 1966, March 29 D M Stegner	1
A	DE, A, 2 427 860 published 1975, January 2 Alumasc Ltd	1
A	FR, G, 613 951 published 1926, December 2 A Petit	1

\* Special categories of cited documents: <sup>16</sup>

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"T" later document published on or after the International filing date or priority date and not in conflict with the application, but cited to understand the principle or theory underlying the invention

"X" document of particular relevance

## IV. CERTIFICATION

Date of the Actual Completion of the International Search \*

1981-03-19

Date of Mailing of this International Search Report \*

1981-03-25

International Searching Authority \*

Signature of Authorized Officer <sup>20</sup>

*[Handwritten Signature]*